PCT/US99/13959

	SEQUENCE LISTING
•	(1) GENERAL INFORMATION:
	(i) APPLICANT: UNITED BIOMEDICAL INC., et al.
5	(ii) TITLE OF INVENTION: PEPTIDE COMPOSITION AS IMMUNOGEN FOR THE TREATMENT OF ALLERGY
	(iii) NUMBER OF SEQUENCES: 91
10	(iv) CORRESPONDENCE ADDRESS: (A) ADDRESSEE: Morgan & Finnegan (B) STREET: 345 Park Avenue
	(C) CITY: New York (D) STATE: NY (E) COUNTRY: USA
15	(F) ZIP: 10154-0053 (v) COMPUTER READABLE FORM:
	(A) MEDIUM TYPE: Floppy disk
	(B) COMPUTER: \IBM PC compatible
	(C) OPERATING SYSTEM: PC-DOS/MS-DOS
20	(D) SOFTWARE: WORD 8.0
	(vi) CURRENT APPLICATION DATA:
	(A) APPLICATION NUMBER: To be assigned
	(B) FILING DATE: 21-JUNE-1999
25	(C) CLASSIFICATION:
	(vii) PRIOR APPLICATION DATA:
	(A) APPLICATION NUMBER: US 09/100,287
	(B) FILING DATE: 20-JUN-1998
	(C) CLASSIFICATION: 514
30	
	(viii) ATTORNEY/AGENT INFORMATION:
	(A) NAME: MARIA C.H.LIN
	(D) DECISTRATION NUMBER: 29.323

(C) REFERENCE/DOCKET NUMBER: 1151-4153PC1

95,

	(i	(A) TE	LEPH	NICA ONE: X: 2	212	-758	-480		•			
	(2)	INFO	RMAT	ION	FOR	SEQ	ID N	0:1:					
·	((A) I B) I	ENGT	CHAR H: 3 ami	25 a.no a	mino cid		ds				
	((ii)	MOLE	CULE	TYF	E: F	rote	in					
	. ((ix)			C/KEY	: î	chai	n of	hum	an I	[gE		
	((x) F	REFEF	RENCE	E: Do		ngtor 3, 41			nich	ı, Im	munol	Rev,
	((xi)	SEQU	JENCE	E DES	SCRIE	PTION	ı: SE	II Q	NO:	:1:		
	Val	Cys	Ser	Arg	Asp 5	Phe	Thr	Pro	Pro	Thr 10	Val	Lys	
	Ile	Leu	Gln 15	Ser	Ser	Cys	Asp	Gly 20	Gly	Gly	His	Phe	
	Pro 25	Pro	Thr	Ile	Gln	Leu 30	Leu	Cys	Leu	Val	Ser 35	Gly	
		Thr	Pro	Gly 40	Thr	Ile	Asn	Ile	Thr 45	Trp	Leu	Glu	
-	Asp	Gly 50	Gln		Met	Asp	Val 55	Asp	Leu	Ser	Thr	Ala 60	
	Ser		Thr	Gln	Glu 65	Gly	Glu	Leu	Ala	Ser 70		Gln	
	Ser	Glu	Leu 75	Thr	Leu	Ser	Gln	Lys 80	His	Trp	Leu	Ser	
	Asp	Arg		Tyr	Thr	Cys	Gln	Val	Thr	Tyr	Gln	Gly	

His Thr Phe Glu Asp Ser Thr Lys Lys Cys Ala Asp

	Ser		Pro	Arg	Gly	Val		Ala	Tyr	Leu	Ser	Arg 120
•	Pro	110 Ser	Pro	Phe		Leu	115 Phe	Ile	Arg	Lys	Ser	
					125		_	_	_	130	D	
		. •	135					140			Pro	
5	Lys 145	Gly	Thr	Val	Asn	Leu 150	Thr	Trp	Ser	Arg	Ala 155	Ser
		Lys	Pro	Val	Asn	His	Ser	Thr	Arg 165	Lys	Glu	Glu
	Lys	Gln 170	Arg		Gly	Thr	Leu 175	Thr	Val	Thr	Ser	Thr 180
10	Leu		Val	Gly	Thr 185	Arg	Asp	Trp	Ile	Glu 190	Gly	Glu
	Thr	Tyr	Gln 195	Cys		Val	Thr	His 200	Pro	His	Leu	Pro
	Arg 205	Ala		Met	Arg	Ser 210	Thr	Thr	Lys	Thr	Ser 215	Gly
15	Pro	Arg	Ala	Ala 220	Pro	Glu	Val	Tyr	Ala 225	Phe	Ala	Thr
	Pro	Glu 230	Trp		Gly	Ser	Arg 235	Asp	Lys	Arg	Thr	Leu 240
20	Ala		Leu	Ile	Gln 245	Asn	Phe	Met	Pro	Glu 250	Asp	Ile
20	Ser	Val	Gln 255	Trp	Leu	His	Asn	Glu 260		Gln	Leu	Pro
	Asp 265			His	Ser	Thr 270		Gln	Pro	Arg	Lys 275	Thr
25			Ser	Gly 280	Phe	Phe	Val	Phe	Ser 285	Arg	Leu	Glu
	Val	Thr 290		Ala	Glu	Trp	Gln 295		Lys	Asp	Glu	Phe 300
	Ile			Ala	Val 305	His	Glu	Ala	Ala	Ser 310	Pro	Ser
30	Gln	Thr	Val		Arg	Ala	Val	Ser 320		. Asn	Pro	Gly
	Lys											
	325											
•					-							

(2) INFORMATION FOR SEQ ID NO:2:

•		(i)	(B)		TH: C: am	312 nino	amin acid	o ac				
5		(ii)	MOI	ECUI	E TY	PE:	prot	ein				
		(ix)	FEA			CY: î	cha	in c	of do	g Ig	E	
10		(x)	REFE	CRENC				al., 282-		unog	renet	ics
		(xi)	SEC	QUENC	CE DE	ESCRI	PTIC	N: S	SEQ I	D NC	2:	
	Ala	Cys	Ala	Leu	Asn 5	Phe	Ile	Pro	Pro	Thr 10	Val	Lys
15	Leu	Phe	His 15	Ser	Ser	Cys	Asn	Pro 20	Val	Gly	Asp	Thr
	His 25	Thr	Thr	Ile	Gln	Leu 30	Leu	Cys	Leu	Ile	Ser 35	Gly
20		Val	Pro	Gly 40	Asp	Met	Glu	Val	Ile 45	Trp	Leu	Val
20	Asp	Gly 50	Gln	Lys	Ala	Thr	Asn 55	Ile	Phe	Pro	Tyr	Thr 60
	Ala	Pro	Gly	Thr	Lys 65	Glu	Gly	Asn	Val	Thr 70	Ser	Thr
25	His	Ser	Glu 75	Leu	Asn	Ile	Thr	Gln 80	Gly	Glu	Trp	Val
	Ser 85	Gln	Lys	Thr	Tyr ·	Thr 90	Cys	Gln	Gly	Phe	Thr 95	Phe
	Lys	Asp	Glu	Ala 100	Arg	Lys	Cys	Ser	Glu 105	Ser	Asp	Pro
30	Arg	Gly 110	Val	Thr	Ser	Tyr	Leu 115	Ser	Pro	Pro	Ser	Pro 120
	Leu	Asp	Leu	Tyr	Val 125	His	Lys	Ala	Pro	Lys 130	Ile	Thr
	Cys	Leu	Val 135	Val		Leu	Ala	Thr 140	Met	Glu	Gly	Met
35												

	Asn	Leu	Thr	Trp	Tyr	Arg	Glu	Ser	Lys	Glu	Pro	Val
0	145					150					155	
	Asn	Pro	Gly	Pro 160	Leu	Asn	Lys	Lys	Asp	His 165	Phe	Asn
		170					175				Val	180
5	Thr	Asn	Asp	Trp	Ile 185	Glu	Gly	Glu	Thr	Tyr 190	Tyr	Cys
	Arg	Val	Thr 195	His	Pro	His	Leu	Pro 200	Lys	Asp	Ile	Val
·	Arg 205	Ser	Ile	Ala	Lys	Ala 210	Pro	Gly	Lys	Arg	Ala 215	Pro
10	Pro	Asp	Val	Tyr 220	Leu	Phe	Leu	Pro	Pro 225	Glu	Glu	Glu
	Gln	Gly 230	Thr	Lys	Asp	Arg	Val 235	Thr	Leu	Thr	Cys	Leu 240
	Ile	Gln	Asn	Phe	Phe 245	Pro	Ala	Asp	Ile	Ser 250	Val	Gln
15												
			255					260			Asp	
	Tyr 265	Thr	Thr	Thr	Gly	Pro 270	His	Lys	Val	Ser	Gly .275	Ser
20	Arg	Pro	Ala	Phe 280	Phe	Ile	Phe	Ser	Arg 285	Leu	Glu	Val
	Ser	Arg 290	Val	Asp	Trp	Glu	Gln 295	Lys	Asn	Lys	Phe	Thr 300
	Cys		Val	Val	His 305	Glu	Ala	Leu	Ser	Gly 310	Ser	Arg
26												•

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 313 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(ix) FEATURE:

- (A) NAME/KEY: î chain of rat IgE
- (x) REFERENCE: Steen et al., J Mol Biol, 1984; 177:19-32.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

	(xi)	SEQ	JENC	E DES	SCRI	OITS	1: SE	EQ II	оио:	:3:	
Ala	Arg	Pro	Val	Asn	Ile	Thr	Lys	Pro	Thr	Val	Asp
1	_			5					10		
Leu	Leu	His	Ser	Ser	Cys	Asp	Pro	Asn	Ala	Phe	His
		15	•		_	_	20				
Ser	Thr	Ile	Gln	Leu	Tyr	Cys	Phe	Val	Tyr	Gly	His
25					30					35	
Ile	Gln	Asn		Val	Ser	Ile	His		Leu	Met	Asp
_	_	_		_	_	m1			C1-	7	17- 3
Asp		riys	lle	Tyr	Asp		HIS	Ата	GIII	ASI	
_		_	~1		~ 1		*	71-	C	m la	60
Leu	IIe	Lys	Glu		GIĀ	гуѕ	Leu	Ата		Inr	Tyr
	_	_	_			~,	-1	01		M = ±	0
Ser	Arg		Asn	Ile	Thr	Gin		GIN	Trp	Met	Ser
						_				- 1	~ 3
	Ser	Thr	Phe	Thr		Lys	Val	Thr	Ser		GTA
								_	_		_
Glu	Asn	Tyr		Ala	His	Thr	Arg		Cys	Ser	Asp
Asp		Pro	Arg	Gly	Val		Thr	Tyr	Leu	Ile	
					•				_		120
Pro	Ser	Pro	Leu		Leu	Tyr	Glu	Asn		Thr	Pro
Lys	Leu	Thr	Cys	Leu	Val	Leu		Leu	Glu	Ser	Glu
	•	135									
Glu	Asn	Ile	Thr	Val		Trp	Val	Arg	Glu		Lys
145						÷					
Lys	Ser	Ile	Gly	Ser	Ala	Ser	Gln	Arg	Ser	Thr	Lys
			160				•	165			
His	His	Asn	Ala	Thr	Thr	Ser	Ile	Thr	Ser	Ile	Leu
	170					175					180
	Ala 1 Leu Ser 25 Ile Asp Leu Ser Glu 85 Glu Asp Pro Lys Glu 145 Lys	Ala Arg 1 Leu Leu Ser Thr 25 Ile Gln Asp Arg 50 Leu Ile Ser Arg Glu Ser 85 Glu Asn Asp Glu 110 Pro Ser Lys Leu Glu Asn 145 Lys Ser His His	Ala Arg Pro 1 Leu Leu His 15 Ser Thr Ile 25 Ile Gln Asn Asp Arg Lys 50 Leu Ile Lys Ser Arg Leu 75 Glu Ser Thr 85 Glu Asn Tyr Asp Glu Pro 110 Pro Ser Pro Lys Leu Thr 135 Glu Asn Ile 145 Lys Ser Ile His His Asn	Ala Arg Pro Val 1	Ala Arg Pro Val Asn 1	Ala Arg Pro Val Asn Ile 1	Ala Arg Pro Val Asn Ile Thr 1	Ala Arg Pro Val Asn Ile Thr Lys	Ala Arg Pro Val Asn Ile Thr Lys Pro 1	Ala Arg Pro Val Asn Ile Thr Lys Pro Thr Leu Leu His Ser Ser Cys Asp Pro Asn Ala Leu Leu His Ser Cys Asp Pro Asn Ala Ser Thr Ile Gln Leu Tyr Cys Phe Val Tyr Jee Gln Asn Asp Val Ser Ile His Tyr Leu Asp Ile His Tyr Leu Asp Ile His Ala Gln Tyr Tyr Gln Gln Tyr Tyr Gln Tyr Gln Tyr Gln Tyr Ile I	Leu Leu His Ser Ser Cys Asp Pro Asn Ala Phe Ser Thr Ile Gln Leu Tyr Cys Phe Val Tyr Gly 25

Pro Val Asp Ala Lys Asp Trp Ile Glu Gly Glu Gly

185

											_	_
	Tyr	Gln		Arg	Val	Asp	His	Pro 200	His	Phe	Pro	Lys
•			195							_	61	
	Pro	Ile	Val	Arg	Ser	Ile	Thr	Lys	Ala	Leu		Leu
	205					210					215	
	Arq	Ser	Ala	Pro	Glu	Val	Tyr	Val	Phe	Leu	Pro	Pro
				220					225		-	
	Glu	Glu	Glu	Glu	Lys	Asn	Lys	Arg	Thr	Leu	Thr	Cys
5		230					235					240
	Leu	Ile	Gln	Asn	Phe	Phe	Pro	Glu	Asp	Ile	Ser	Val
					245					250		
	Gln	Trp	Leu	Gln	Asp	Ser	Lys	Leu	Ile	Pro	Lys	Ser
			255					260				
10	Gln	His	Ser	Thr	Thr	Thr	Pro	Leu	Lys	Thr	Asn	Gly
10	265					270					275	
	Ser	Asn	Gln	Arg	Phe	Phe	Ile	Phe	Ser	Arg	Leu	Glu
				280					285			
	Val	Thr	Lys	Ala	Leu	Trp	Thr	Gln	Thr	Lys	Gln	Phe
		290			•		295					300
15	Thr	Cys	Arg	Val	Ile	His	Glu	Ala	Leu	Arg	Glu	Pro
					305					310		
	Arg											
								•				

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 313 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
- 25 (ii) MOLECULE TYPE: protein
 - (ix) FEATURE:
 - (A) NAME/KEY: î chain of mouse IgE
- 30 (x) REFERENCE: Ishida et al., EMBO, 1982; 1:1117-1123
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

	Val 1	Arg	Pro	Val	Thr 5	His	Ser	Leu	Ser	Pro 10	Pro	Trp
•	Ser	Tyr	Ser 15	Ile	His	Arg	Cys	Asp 20	Pro	Asn	Ala	Phe
	His 25	Ser	Thr	Ile	Gln	Leu 30	Tyr	Cys	Phe	Ile	Tyr 35	Gly
5	His	Ile	Leu	Asn 40	Asp	Val	Ser	Val	Ser 45	Trp	Leu	Met
	Asp	Asp 50	Arg	Glu	Ile	Thr	Asp 55	Thr	Leu	Ala	Gln	Thr 60
	Val	Leu	Ile	Lys	Glu 65	Glu	Gly	Lys	Leu	Ala 70	Ser	Thr
10	Cys	Ser	Lys 75	Leu	Asn	Ile	Thr	Glu 80	Gln	Gln	Trp	Met
	Ser 85	Glu	Ser	Thr	Phe	Thr 90	Cys	Arg	Val	Thr	Ser 95	Gln
	Gly	Cys	Asp	Tyr 100	Leu	Ala	His	Thr	Arg 105	Arg	Cys	Pro
15	Asp	His 110	Glu	Pro	Arg	Gly	Ala 115	Ile	Thr	Tyr	Leu	Île 120
	Pro	Pro	Ser	Pro	Leu 125	Asp	Leu	Tyr	Gln	Asn 130	Gly	Ala
20	Pro	Lys	Leu 135	Thr	Cys	Leu	Val	Val 140	Asp	Leu	Glu	Ser
20	Glu 145	Lys	Asn	Val	Asn	Val 150	Thr	Trp	Asn	Gln	Glu 155	Lys
	Lys	Thr	Ser	Val 160	Ser	Ala	Ser	Gln	Trp 165	Tyr	Thr	Lys
25	His	His 170	Asn	Asn	Ala	Thr	Thr 175	Ser	Ile	Thr	Ser	Ile 180
	Leu	Pro	Val	Val	Ala 185	Lys	Asp	Trp	Ile	Glu 190	Gly	Tyr
	Gly	Tyr	Gln 195	Cys	Ile	Val	Asp	Arg 200	Pro	Asp	Phe	Pro
30	Lys 205	Pro	Ile	Val	Arg	Ser 210	Ile	Thr	Lys	Thr	Pro 215	Gly
		Arg	Ser	Ala 220	Pro		Val	Tyr	Val 225	Phe	Pro	Pro
	Pro	Glu 230	Glu		Ser	Glu	Asp 235	Lys		Thr	Leu	Thr 240
35												

Cys Leu Ile Gln Asn Phe Phe Pro Glu Asp Ile Ser 250 245 Val Gln Trp Leu Gly Asp Gly Lys Leu Ile Ser Asn 260 255 Ser Gln His Ser Thr Thr Thr Pro Leu Lys Ser Asn 275 270 265 Gly Asn Gln Gly Phe Phe Ile Phe Ser Arg Leu Glu 280 5 Val Ala Lys Thr Leu Trp Thr Gln Arg Lys Gln Phe 295 290 Thr Cys Gln Val Ile His Glu Ala Leu Gln Lys Pro 310 305 Arq 10 (2) INFORMATION FOR SEQ ID NO:5: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 25 amino acids 15 (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide 20

25

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Cys Gly Glu Thr Tyr Gln Ser Arg Val Thr His Pro 5 His Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys 20 15

Cys 25

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 25 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear

```
(ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:
         Cys Gly Glu Thr Tyr Tyr Ser Arg Val Thr His Pro
                                               10
         His Leu Pro Lys Asp Ile Val Arg Ser Ile Ala Lys
5
                                       20
                  15
         Cys
          25
         (2) INFORMATION FOR SEQ ID NO:7:
10
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 25 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
15
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:
         Cys Gly Glu Gly Tyr Gln Ser Arg Val Asp His Pro
20
                                               10
           1
         His Phe Pro Lys Pro Ile Val Arg Ser Ile Thr Lys
                 15
                                       20
         Cys
          25
25
         (2) INFORMATION FOR SEQ ID NO:8:
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 25 amino acids
                 (B) TYPE: amino acid
30
                 (D) TOPOLOGY: linear
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:
```

0	Cys C	Gly '	Tyr	Gly	Tyr 5	Gln	Ser	Ile	Val	Asp 10	Arg	Pro
	Asp E	Phe :	Pro 15	Lys	Pro	Ile	Val	Arg 20	Ser	Ile	Thr	Leu
	Cys 25											
5												
	(2)	INFO	RMA	NOI	FOR	SEQ	ID 1	NO:9	:			
10		(A) 1 B) 1	LENG' TYPE	TH:	ARAC' 18 an ino a : lin	mino acid					
		(ii)	MO	LECU:	LE T	YPE:	pep	tide				
15		(xi)	SE	QUEN	CE D	ESCR.	IPTI	ON:	SEQ	ID N	0:9:	
	Lys :				5		Ile	Thr	Arg	Ile 10		Thr
20	Ile	Ile	Thr 15	Thr	Ile	Asp						
·	(2)	INF	ORM	OITA	n fo	R SE	Q ID	NO:	10:			
25		(i)	(A) LE	NGTH	HARA : 15	ami	no a				
						GY:						
20		(ii	.) M	OLEC	ULE	TYPE	: pe	ptid	le			
30		(ix	(-	AME/	KEY:		lifie	d-si	te`		
			(B) L	OCAT,	'ION:	T					

٥		(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
-	(ix)	FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 2
5		(D) OTHER INFORMATION: /note= "Ser or Thr"
3	(ix)	FEATURE:
		(A) NAME/KEY: Modified-site (B) LOCATION: 5
		(D) OTHER INFORMATION: /note= "Lys or Arg"
10	(ix)	FEATURE:
	,,	(A) NAME/KEY: Modified-site (B) LOCATION: 6
		(D) OTHER INFORMATION: /note= "Gly or Thr"
15	(ix)	FEATURE:
		(A) NAME/KEY: Modified-site
		<pre>(B) LOCATION: 10 (D) OTHER INFORMATION: /note= "His or Thr"</pre>
	(iv)	FEATURE:
20	(17)	(A) NAME/KEY: Modified-site
		(B) LOCATION: 11
		(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix)	FEATURE:
25		(A) NAME/KEY: Modified-site
		(B) LOCATION: 12
		(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(ix)	FEATURE:
30		(A) NAME/KEY: Modified-site
		(B) LOCATION: 14
		(D) OTHER INFORMATION: /note= "Gly or Thr"
	(ix)	FEATURE:
35		(A) NAME/KEY: Modified-site

	(B) LOCATION: 15 (D) OTHER INFORMATION: /note= "Ile, Met or Val"
0	(D) OTHER INFORMATION: /Mote- Tie, Met of Val
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
	Xaa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa Xaa Xaa
	1 5 10
5	Glu Xaa Xaa
	15
	(2) INFORMATION FOR SEQ ID NO:11:
10	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 19 amino acids
	(B) TYPE: amino acid
•	(D) TOPOLOGY: linear
15	(ii) MOLECULE TYPE: peptide
	·
	<pre>(ix) FEATURE:</pre>
	(B) LOCATION: 3
20	(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
20	
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 4
25	(D) OTHER INFORMATION: Inote= "Ser or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 7
	(D) OTHER INFORMATION: /note= "Lys or Arg"
30	
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	<pre>(B) LOCATION: 8 (D) OTHER INFORMATION: /note= "Gly or Thr"</pre>
	(D) OTHER INFORMATION: / HOLE- GIY OF THE

o	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 12 (D) OTHER INFORMATION: /note= "His or Thr"</pre>
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
5	(B) LOCATION: 13
	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
10	(B) LOCATION: 14
	(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
15	(B) LOCATION: 16
	(D) OTHER INFORMATION: /note= "Gly Or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
20	<pre>(B) LOCATION: 17 (D) OTHER INFORMATION: /note= "Ile, Met or Val"</pre>
	(b) OTHER INFORMATION. /Mote- Tie, Met of Val
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:
	Ile Ser Xaa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa
25	1 5 10
	Xaa Xaa Glu Xaa Xaa Leu Phe
·	15
	(2) INFORMATION FOR SEQ ID NO:12:
30	
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 12 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear

	(ii) MOLECULE TYPE: peptide
0	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:
	Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu
5	
	(2) INFORMATION FOR SEQ ID NO:13:
10	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 16 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:
	Thr Ala Lys Ser Lys Lys Phe Pro Ser Tyr Thr Ala 1 5 10
	Thr Tyr Gln Phe 15
20	
	(2) INFORMATION FOR SEQ ID NO:14:
25	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 45 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
•	(ii) MOLECULE TYPE: peptide
30	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:
	Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr
	Ile Ile Thr Thr Ile Asp Gly Gly Cys Gly Glu Thr
35	

o	25	Gln				30				Leu	Pro 35	Arg
5	(2)	INFO	SEQ	JENCI	E CH	ARACI	TERIS		S:			
10		(ii)	(B)	TYPI	E: ar	mino Y: li	acio	d r		·		
15	1	Ala	Lys	Ser	Lys 5	Lys	Phe	Pro	Ser	10	Thr	Ala
-		Tyr	15					. 20			Ile	
20	_	Gly	_	40					45			
25		Pro 50 Lys	•	Leu	PIO	Arg	55 •	rea	Mec	Alg	361	60
	(2)	INF	ORMA'	TION	FOR	SEQ	ID 1	NO:1	6:			
30		(i)	(B)	LEN TYP	GTH: E: a		mino aci	aci d				

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:
        Pro Pro Xaa Pro Xaa Pro
          1
         (2) INFORMATION FOR SEQ ID NO:17:
5
            (i) SEQUENCE CHARACTERISTICS:
                (A) LENGTH: 59 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
10
            (ii) MOLECULE TYPE: peptide
            (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:
        Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu
15
                           5
          1
        Gly Gly Lys Lys Ile Ile Thr Ile Thr Arg Ile
                  15
         Ile Thr Ile Ile Thr Thr Ile Asp Gly Gly Cys Gly
                              30
         25
         Glu Thr Tyr Gln Ser Arg Val Thr His Pro His Leu
20
                                           45
         Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys
                                  55
              50
         (2) INFORMATION FOR SEQ ID NO:18:
25
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 46 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
30
             (ii) MOLECULE TYPE: peptide
             (ix) FEATURE:
                  (A) NAME/KEY: Modified-site
```

(B) LOCATION: 4

			(D)	отн	ER	INFOF	RMATI	ON:	/not	e=	"Ser	or	Thr"
•				mune	_								
		(IX)		TURE		EY: M	adi f	iad-	.cite				
	-	-						.1eu	3110				
						ON: 7		ON .	/not	O	"T ve	05	Ara"
			(D)	OTH	EK	INFOR	(LINAT I	.014.	/1100	_	כעם	01	1119
5		(ix)	FEA	TURE	:								
			(A)	NAM	E/K	EY: N	1odif	ied-	site	!			
			(B)	LOC	ATI	ON: 8	3						
			(D)	OTH	ER	INFO	TAM	ON:	/not	.e=	"Gly	Or	Thr"
10		(ix)	FEA	TURE	:								
			(A)	NAM	E/K	EY: N	10dif	ied-	-site)			
						ON: 1							
			(D)	ОТН	EŖ	INFO	RMAT	ON:	/not	:e=	"His	Or	Thr"
1.5		(ix)		TURE									
15						EY: N		fied-	-site	•			
•						ON:							
			(D)	OTH	ER	INFO	RMATI	ON:	/not	e=	"Lys	or	Arg"
		(ix)	FEA	TURE	:								
20			(A)	NAM	ie/k	ŒY: 1	Modi	fied	-site)			
			(B)	LOC	ATI	ON:	16						
			(D)	OTH	IER	INFO	RMAT	ION:	/not	e=	"Gly	Or	Thr"
		(xi)	SEC	UENC	E D	DESCR	IPTIC	ON:	SEQ 1	D N	0:18	:	
25													
	Ile	Ser	Ile	Xaa		ı Ile	Xaa	Xaa	Val			ха	a .
	1				5	•				10	•		
	Xaa	Ile	Glu	Xaa	Ile	e Leu	Phe	Gly	Gly	Cys	Gly	Gl	u
			15					20					
30	Thr	Tyr	Gln	Ser	Arc	y Val	Thr	His	Pro	His	Leu	Pr	0
	25					30					35		
	Arg	Ala	Leu	Met	Arc	g Ser	Thr	Thr	Lys	Cys	5		•
				40					45				
									•				*
35	(2)	INF	ORMAI	NOI	FOF	R SEQ	ID 1	NO:1	9:				

۰	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 63 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
	(5) 101020011 220041
5	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 21
	(D) OTHER INFORMATION: /note= "Ser or Thr"
10	
•••	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 24
	(D) OTHER INFORMATION: /note= "Lys or Arg"
15	() SPANUES.
13	<pre>(ix) FEATURE:</pre>
	(B) LOCATION: 25
•	(D) OTHER INFORMATION: /note= "Gly Or Thr"
	(b) offillic fitterialization passes and fitterialization
20	(ix) FEATURE:
20	(A) NAME/KEY: Modified-site
	(B) LOCATION: 29
	(D) OTHER INFORMATION: /note= "His Or Thr"
25	(ix) FEATURE:
23	(A) NAME/KEY: Modified-site
	(B) LOCATION: 30
	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
30	(A) NAME/KEY: Modified-site
50	(B) LOCATION: 33
	(D) OTHER INFORMATION: /note= "Gly Or Thr"
	(xi) SEOUENCE DESCRIPTION: SEQ ID NO:19:

	Thr	Ala	Lys	Ser		Lys	Phe	Pro	Ser	Tyr 10	Thr	Ala	ì
•	1				5								
	Thr	Gln	Phe 15	Gly	Gly	Ile	Ser	Ile 20	Xaa	Glu	Ile	Xaa	à
	Xaa	Val	Ile	Val	Xaa	Xaa	Ile	Glu	Xaa	Ile	Leu	Phe	9
	25				-	30					35		
			Cys	C1 11	Glu		Ťvr	Gln	Ser	Ara	Val	Thi	2
5	GIY	GIY	Cys	40	Giu	1111	- 7 -	02	45	9		_	
	His	Pro	His	Leu	Pro	Arq	Ala	Leu	Met	Arg	Ser	Thi	r
	1110	50					55					60	
	Thr	Lys	Cys			*							
10													
	(2)	INF	ORMA'	TION	FOR	SEQ	ID I	NO:2	0:				
		/ i \	SEQUI	ENCE	CHAI	RACT	ERIS'	rics	:				
			(A)										
			(B) '										
15					LOGY								
	ń.		(D)	1010	ВОСТ							•	
		(ii)	MOL	ECUL	E TY	PE:	pept	ide					
		, ,											
		(ix)	FEA'	TURE	:								
20			(A)	MAM	E/KE	Y: M	odif	ied-	site				
					OITA								
			(D)	OTH	ER I	NFOR	MATI	ON:	/not	e= "	Ser	or	Thr"
		(ix)	FEA	TURE	:								
			(A)	NAM	E/KE	Y: M	lodif	ied-	site				
25					ATIO			•					
		•			ER I			ON:	/not	e= "	Lys	or	Arg"
,		(ix)	FEA	TURE	:						,		
			(A)	NAM	E/KE	Y: M	lodif	ied-	site	:			
30			(B)	LOC	ATIO	N: 2	2						
			(D)	ОТН	ER I	NFOF	RMATI	ON:	/not	.e= "	Gly	or	Thr"
		(ix)	FEA	TURE	::							•	
					E/KE	Y: M	odif	ied-	site	:			
25					ATIO								

10

15

20

25

(D) OTHER INFORMATION: /note= "His or Thr" (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 27 (D) OTHER INFORMATION: /note= "Lys or Arg" (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 30 (D) OTHER INFORMATION: /note= "Gly or Thr" (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20: Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu 5 Gly Gly Ile Ser Ile Xaa Glu Ile Xaa Xaa Val Ile 20 15 Val Xaa Xaa Ile Glu Xaa Ile Leu Phe Gly Gly Cys 30 Gly Glu Thr Tyr Gln Ser Arg Val Thr His Pro His 40 Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys 55 50 (2) INFORMATION FOR SEQ ID NO:21: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 42 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Modified-site

(B) LOCATION: 1

(D) OTHER INFORMATION: /note= "Ile, Met or Leu"

	(i	ix) FEATURE:
•		(A) NAME/KEY: Modified-site
_		(B) LOCATION: 2
		(D) OTHER INFORMATION: /note= "Ser or Thr"
	•	
	<i>o</i> (j	ix) FEATURE:
_		(A) NAME/KEY: Modified-site
5		(B) LOCATION: 5
		(D) OTHER INFORMATION: /note= "Lys or Arg"
	1-	ix) FEATURE:
	\-	(A) NAME/KEY: Modified-site
10		(B) LOCATION: 6
10		(D) OTHER INFORMATION: /note= "Gly or Thr"
	(:	ix) FEATURE:
		(A) NAME/KEY: Modified-site
15		(B) LOCATION: 10
13		(D) OTHER INFORMATION: /note= "His or Thr"
	(:	ix) FEATURE:
		(A) NAME/KEY: Modified-site
		(B) LOCATION: 11
20		(D) OTHER INFORMATION: /note= "Lys or Arg"
	1	ix) FEATURE:
	1.	(A) NAME/KEY: Modified-site
		(B) LOCATION: 12
		(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
25		
	. (ix) FEATURE:
		(A) NAME/KEY: Modified-site
		(B) LOCATION: 14
		(D) OTHER INFORMATION: /note= "Gly or Thr"
30		· · · · · · · · · · · · · · · · · · ·
	(ix) FEATURE:
		(A) NAME/KEY: Modified-site
		<pre>(B) LOCATION: 15 (D) OTHER INFORMATION: /note= "Ile, Met or Val"</pre>
		(D) OTHER INFORMATION: / Note- Tie, Met of val

	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:
•	Xaa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa Xaa Xaa
	1 5 10
	Glu Xaa Xaa Gly Gly Cys Gly Glu Thr Tyr Gln Ser 15 20
	Arg Val Thr His Pro His Leu Pro Arg Ala Leu Met
5	25 30 35
	Arg Ser Thr Thr Lys Cys 40
10	(2) INFORMATION FOR SEQ ID NO:22:
10	
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 60 amino acids
	(B) TYPE: amino acid
16	(D) TOPOLOGY: linear
15	(ii) MOLECULE TYPE: peptide
•	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
20	(B) LOCATION: 19
	(D) OTHER INFORMATION: /note= "Ile, Met or Leu
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 20
25	(D) OTHER INFORMATION: /note= "Ser or Thr"
•	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 23
30	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 24
	(D) OBURD INFORMATION: /+ "Clu or The"

(ix) FEATURE:

	(A) NAME/KEY: Modified-site
	(B) LOCATION: 28
	(D) OTHER INFORMATION: /note= "His or Thr"
_	(ix) FEATURE:
5	(A) NAME/KEY: Modified-site
	(B) LOCATION: 29
	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
10	(B) LOCATION: 30
	(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(3)
	(ix) FEATURE:
15	(A) NAME/KEY: Modified-site
	(B) LOCATION: 32
•	(D) OTHER INFORMATION: /note= "Gly or Thr"
	(ix) FEATURE:
•	(A) NAME/KEY: Modified-site
20	(B) LOCATION: 33
	(D) OTHER INFORMATION: /note= "Ile, Met or Val"
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:
0.5	
25	Thr Ala Lys Ser Lys Lys Phe Pro Ser Tyr Thr Ala
	1 5 10
•	Thr Tyr Gln Phe Gly Gly Xaa Xaa Glu Ile Xaa Xaa
	15 20
	Val Ile Val Xaa Xaa Glu Xaa Xaa Gly Gly Cys
30	25 30 35
	Gly Glu Thr Tyr Gln Ser Arg Val Thr His Pro His
	40 45
	Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys
	50 55 60

```
(2) INFORMATION FOR SEQ ID NO:23:
            (i) SEQUENCE CHARACTERISTICS:
                (A) LENGTH: 56 amino acids
                (B) TYPE: amino acid
                (D) TOPOLOGY: linear
5
            (ii) MOLECULE TYPE: peptide
            (ix) FEATURE:
                (A) NAME/KEY: Modified-site
                (B) LOCATION: 15
10
                D) OTHER INFORMATION: /note= "Ile, Met or Leu"
            (ix) FEATURE:
                (A) NAME/KEY: Modified-site
                (B) LOCATION: 16
15
                (D) OTHER INFORMATION: /note= "Ser or Thr"
            (ix) FEATURE:
                (A) NAME/KEY: Modified-site
                (B) LOCATION: 19
                (D) OTHER INFORMATION: /note= "Lys or Arg"
20
            (ix) FEATURE:
                 (A) NAME/KEY: Modified-site
                 (B) LOCATION: 20
                 (D) OTHER INFORMATION: /note= "Gly or Thr"
25
            (ix) FEATURE:
                (A) NAME/KEY: Modified-site
                 (B) LOCATION: 24
                 (D) OTHER INFORMATION: /note= "His or Thr"
30
            (ix) FEATURE:
                 (A) NAME/KEY: Modified-site
                 (B) LOCATION: 25
                 (D) OTHER INFORMATION: /note= "Lys or Arg"
```

	(ix) FEATURE:
0	(A) NAME/KEY: Modified-site
	(B) LOCATION: 26
	(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
5	(B) LOCATION: 28
J	(D) OTHER INFORMATION: /note= "Gly or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 29
10	(D) OTHER INFORMATION: /note= "Ile, Met, or Val"
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:
	Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu
15	1 5 10
	Gly Gly Xaa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa
	15 20
	Xaa Xaa Glu Xaa Xaa Gly Gly Cys Gly Glu Thr Tyr
	25 30 35
20	Gln Ser Arg Val Thr His Pro His Leu Pro Arg Ala
	40 45
	Leu Met Arg Ser Thr Thr Lys Cys 50 . 55
	50 . 55
	(2) INFORMATION FOR SEQ ID NO:24:
25	
	(i) SEQUENCE CHARACTERISTICS:
•	(A) LENGTH: 46 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
30	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) IOCATION: A

		(D) (OTHER	INF	ORMA	MION	1: /r	note=	∵"S∈	er or	Thr"
•	(ix)	FEA'	TURE:								
			NAME/	KEY:	Mod	lifie	ed-s:	ite			
			LOCAT								
						ATION	1: /r	note=	"L)	/S 01	Arg"
5	(ix)	FEA'	TURE:								
		(A)	NAME/	KEY:	Moc	difie	ed-si	ite			
			LOCAT								
		(D) (OTHER	INF	ORMA	MOITA	J: /1	note=	• "G]	ry o	Thr"
10	(ix)		TURE:								
		(A)	NAME/	KEY:	Mod	difie	ed-s	ite			
			LOCAT								
		(D)	OTHER	INF	ORMA	ATION	J: /1	note=	: "Hi	is o	Thr"
	(ix)		TURE:								
15			NAME/	-		difie	ed-s:	ite			
		• -	LOCAT								
		(D)	OTHER	INF	ORMA	MOITE	V: /1	note=	· "Ly	ys o	r Arg"
	(ix)		TURE:				_				
20			NAME/			difi∈	ed-s:	ite			
			LOCAT				1. /.		- "C	١ م	mb.s.t
		(D)	OTHER	TNF	ORMA	4.T.T.OV		note=	= "G.	ry o:	r Thr'
	(xi)	SEQ	UENCE	DES	CRI	MOIT?	1: S	EQ II	ONO:	:24:	
25	Ile Šer	Ile	Xaa	Glu	Ile	Xaa	Xaa	Val	Ile	Val	Xaa
	1			5					10		
	Xaa Ile	Glu	Xaa	Ile	Leu	Phe	Gly	Gly	Cys	Gly	Tyr
		15					20				
30	Gly Tyr	Gln	Ser	Ile	Val	Asp	His	Pro	Asp		Pro
	25				30					35	
	Lys Pro	Ile	Val	Arg	Ser	Ile	Thr	Lys	Cys		
			40					45			

	(2) INFORMATION FOR SEQ ID NO:25:
•	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 45 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
5	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:
10	Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr
10	Ile Ile Thr Thr Ile Asp Gly Gly Cys Gly Tyr Gly 15 20
	Tyr Gln Ser Ile Val Asp His Pro Asp Phe Pro Lys 25 30 35
15	Pro Ile Val Arg Ser Ile Thr Lys Cys 40 45
	(2) INFORMATION FOR SEQ ID NO:26:
20	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 45 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
25	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:
	Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr 1 5 10
30	Ile Ile Thr Thr Ile Asp Gly Gly Cys Gly Glu Thr 15 20
	Tyr Tyr Ser Arg Val Thr His Pro His Leu Pro Lys

Asp Ile Val Arg Ser Ile Ala Lys Cys
40 45

- (2) INFORMATION FOR SEQ ID NO:27:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 46 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide

10 (ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /note= "Met or Leu"

15 (ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
 - (D) OTHER INFORMATION: /note= "Thr"

20 (ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /note= "Arg"

(ix) FEATURE:

- 25 (A) NAME/KEY: Modified-site
 - (B) LOCATION: 8
 - (D) OTHER INFORMATION: /note= "Thr"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
 - (B) LOCATION: 12
 - (D) OTHER INFORMATION: /note= "Thr"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

35

•	(B) LOCATION: 13 (D) OTHER INFORMATION: /note= "Arg"
~	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 14 (D) OTHER INFORMATION: /note= "Met or Leu"</pre>
5	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 16 (D) OTHER INFORMATION: /note= "Thr"</pre>
10	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 17 (D) OTHER INFORMATION: /note= "Met or Val"</pre>
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:
20	Ile Ser Ile Ser Glu Ile Lys Gly Val Ile Val His 1 5 10 Lys Ile Glu Gly Ile Leu Phe Gly Gly Cys Gly Glu 15 20 Thr Tyr Tyr Ser Arg Val Thr His Pro His Leu Pro 25 30 35
25	Lys Asp Ile Val Arg Ser Ile Ala Lys Cys 40 45 (2) INFORMATION FOR SEQ ID NO:28:
30	 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 49 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
35	(ii) MOLECULE TYPE: peptide(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

•	Cys 1	Ala	Asp	Ser	Asn 5	Pro	Arg	Gly	Val	Ser 10	Ala	Tyr
	Leu	Seŗ	Arg 15	Pro	Ser	Pro	Phe	Asp 20	Leu	Phe	Ile	Arg
5	Lys 25	Ser	Pro	Thr	Ile	Thr 30	Ser	Leu	Val	Val	Asp 35	Leu
	Ala	Pro	Ser	Lys 40	Gly	Thr	Val	Asn	Leu 45	Thr	Trp	Ser
	Arg	•										
10	(2)	INFO	ORMAT	rion	FOR	SEQ	ID 1	NO:29	9:			
15		(i)	(A) (B)	LENO TYPE	E CHAGTH: E: ar	60 a	amino acio	ac:				
					LE TY				SEQ :	ID N	D:29	:
20	Gln 1	Gly	His	Thr	Phe 5	Glu	Asp	Ser	Thr	Lys 10	Lys	Cys ·
			15		Pro			20				
25	25				Pro	30					35	
	Ser	Pro	Thr	Ile 40	Thr	Ser	Leu	Val	Val 45	Asp	Leu	Ala
30	Pro	Ser 50	Lys	Gly	Thr	Val	Asn 55	Leu	Thr	Trp	Ser	Arg 60
	(2)	INFO	ORMA:	NOI	FOR	SEQ	ID 1	NO: 30	0:			

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 64 amino acids

(B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:30: 5 Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser 5 Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu 30 10 Phe Ile Arg Lys Ser Pro Thr Ile Thr Ser Leu Val 45 Val Asp Leu Ala Pro Ser Lys Gly Thr Val Asn Leu 55 60 50 Thr Trp Ser Arg 15 (2) INFORMATION FOR SEQ ID NO:31: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 76 amino acids (B) TYPE: amino acid 20 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31: 25 Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Ser Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser 15 20 Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val 30 30

Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu

Phe Ile Arg Lys Ser Pro Thr Ile Thr Ser Leu Val

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•	Val	Asp	Leu	Ala	Pro 65	Ser	Lys	Gly	Thr	Val 70	Asn	Leu
	Thr	Trp	Ser 75	Arg								
	(2)	INF	ORMA:	rion	FOR	SEQ	ID 1	10:32	2:			
5		(i)	(A) (B)	LENC TYPE	E CHA GTH: E: ar DLOGY	35 a	amino acio	o aci				
10		(ii)	MOI	LECUI	LE TY	PE:	pept	cide				
					CE DE							
	Cys 1	Ala	Asp	Ser	Asn 5	Pro	Arg	Gly	Val	Ser 10	Ala	Tyr
15	Leu	Ser	Arg 15	Pro	Ser	Pro	Phe	Asp 20	Leu	Phe	Ile	Arg
	Lys 25	Ser	Pro	Thr	Ile	Thr 30	Ser	Leu	Val	Val	Asp 35	
20	(2)	INFO	ORMAT	rion	FOR	SEQ	ID 1	10:33	3:			
		(i)			E CHA							
			(B)	TYPE	E: an	nino	acio	t				
25					DLOGY							
		(ii)	MOI	LECUI	LE TY	PE:	pept	ide				
		(xi)	SEÇ	QUENC	CE DE	ESCRI	PTIC	ON: S	SEQ :	ID NO	33:	:
30	Gln 1	Gly	His	Thr	Phe 5	Glu	Asp	Ser	Thr	Lys 10	Lys	Cys
	Ala	Asp	Ser 15	Asn	Pro	Arg	Gly	Val 20	Ser	Ala	Tyr	Leu

•	25				Pro Thr	30					Arg 35	Lys
	-	-		40					45			
5	(2)	INFO	ORMAI	NOI	FOR	SEQ	ID 1	10:34	1:			
		(i)	(A) (B)	LENC TYPE	E CHA GTH: E: ar OLOGY	50 a	amino acio	aci				
10		(ii)	•		LE TY							
		(xi)	SE(QUENC	CE DE	ESCRI	IPTI(on: S	SEQ :	D NO	D:34:	:
15	Gln 1	Val	Thr	Tyr	Gln 5	Gly	His	Thr	Phe	Glu 10	Asp	Ser
	Thr	Lys	Lys 15	Суѕ	Ala	Asp	Ser	Asn 20	Pro	Arg	Gly	Val
••	Ser 25	Ala	Tyr	Leu	Ser	Arg 30	Pro	Ser	Pro	Phe	Asp 35	Leu
20		Ile	Arg	Lys 40	Ser		Thr	Ile	Thr 45	Ser	Leu	Val
	Val	Asp 50										
25												
	(2)	INF	ORMA!	rion	FOR	SEQ	ID 1	NO: 3	5:			
		(i)	_		E CHA							
30			(B)	TYP	E: ar	mino	aci	d				
			(D)	TOP	OLOG	Y: 1:	inea	r				
		(ii) MO	LECU	LE T	YPE:	pep	tide				

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

		(xi)) SE(QUEN	CE DI	ESCR:	IPTI(ои: 3	SEQ :	ID NO	35:	:
0	Gln 1	Lys	His	Trp	Leu 5	Ser	Asp	Arg	Thr	Tyr 10	Thr	Ser
	-		Thr 15	Tyr	Gln	Gly	His	Thr 20	Phe	Glu	Asp	Ser
5	25					30		Asn			35	
				40				Ser	45			
	Phe	Ile 50	Arg	Lys	Ser	Pro	Thr 55	Ile	Thr	Ser	Leu	Val 60
10	Val	Asp										
	(2)	INF	ORMA'	rion	FOR	SEQ	ID I	NO:30	6:			
15		(i)						STICS				
13	•		(B)	TYP	E: ar OLOG	mino	acio	d	LUS			
		(ii) MOI	LECU	LE T	YPE:	pep	tide				
20		(xi)) SE	QUEN	CE DI	ESCR	IPTI	ON:	SEQ	ID N	0:36	:
	Cys	Ala	Asp	Ser	Asn 5	Pro	Arg	Gly	Val	Ser 10	Ala	Tyr
25	Leu	Ser	Arg 15	Pro	Ser	Pro	Phe	Asp 20	Leu	Phe	Ile	Arg
	Lys 25	Ser	Pro	Thr	Ile							
30	(2)	INF	ORMA'	TION	FOR	SEQ	ID !	NO:3	7:			
		(i)						STIC				
					GTH: E: an			o ac. d .	Ias			
					orog.							

0		(ii) M	OLECUI	LE TY	PE:	pept	ide				
	· -	(xi) S	EQUEN	CE DE	ESCRI	PTIC	on: s	SEQ :	ID NO	D:37:	;
	Gln 1	Gly Hi	s Thr	Phe 5	Glu	Asp	Ser	Thr	Lys 10	Lys	Cys
5	Ala	Asp Se		Pro	Arg	Gly	Val 20	Ser	Ala	Tyr	Leu
	Ser 25	Arg Pr	o Ser	Pro	Phe 30	Asp	Leu	Phe	Ile	Arg 35	Lys
10	Ser	Pro Th	r Ile 40								
	(2)	INFORM	ATION	FOR	SEQ	ID 1	10:38	3:			
15		(A	QUENCE (A) LENG (B) TYPE (D) TOPE	STH: E: ar	44 a	amino acio	o ac:				
20			OLECU:					SEQ :	ID N	O:38	:
	Gln 1	Val Th	r Tyr	Gln 5	Gly	His	Thr	Phe	Glu 10	Asp	Ser
25		Lys Ly	s Cys 5	Ala	Asp	Ser	Asn 20	Pro	Arg	Gly	Val
	25	Ala Ty		•	30			Pro	Phe	Asp 35	Leu
30	Phe	Ile Ar	g Lys 40	Ser	Pro	Thr	Ile				
- -	(2)	INFORM	MATION	FOR	SEQ	ID'	NO:3	9:			<u>.</u>
			QUENC								
		(Z	A) LEN	GTH:	56	amin	o ac	ids			

(B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:39: 5 Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Ser Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser 15 Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val 30 10 Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu Phe Ile Arg Lys Ser Pro Thr Ile 55 50 15 (2) INFORMATION FOR SEQ ID NO:40: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 76 amino acids (B) TYPE: amino acid 20 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:40: 25 Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Cys 5 Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser 20 Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val 30 25 30

Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu

Phe Ile Arg Lys Ser Pro Thr Ile Thr Cys Leu Val

50

35

•	Val	Asp	Leu	Ala	Pro 65	Ser	Lys	Gly	Thr	70	Asn	Leu
	Thr	Trp	Ser 75	Arg								
5	(2)	INFO	ORMA:	rion	FOR	SEQ	ID N	NO:43	l:			
		(i)	(A)	LENG	E CH <i>l</i> GTH: E: ar	10 a	amino	ac:				
					DLOG							
10		(ii)	MO1	LECUI	LE T	YPE:	pept	tide				
		(xi)) SE(QUENC	CE DI	ESCRI	PTIC	ON: S	SEQ.	ID NO	0:41:	:
15	Cys 1	Lys	Gln	Arg	Asn 5	Gly	Thr	Leu	Thr	Cys 10		
	(2)	INFO	ORMA:	rion	FOR	SEQ	ID 1	NO: 42	2:			
20		(i)	(A) (B)	LENG TYPE	E CHAGETH: E: ar	45 a	amino acio	ac:				
		(ii)) MOI	LECUI	LE T	YPE:	pept	tide				
25		(xi) SE(QUENC	CE DI	ESCR	PTIC	он: 3	SEQ :	ID NO	D: 42	:
	Gln 1	Lys	His	Trp	Leu 5	Ser	Asp	Arg	Thr	Tyr 10	Thr	Cys
30	Gln	Val	Thr 15	Tyr	Gln	Gly	His	Thr 20	Phe	Glu	Asp	Ser
	Thr 25	Lys	Lys	Cys	Ala	Asp 30	Ser	Asn	Pro	Arg	Gly 35	Val
	Ser	Ala	Tyr	Leu 40	Ser	Arg	Pro	Ser	Pro 45			

o .	(2) INFORMATION FOR SEQ ID NO:43:
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 34 amino acids
	(B) TYPE: amino acid
5	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:
10	Cys Pro Ser Lys Gly Thr Val Asn Leu Thr Trp Ser
	1 5 10
	Arg Ala Ser Gly Lys Pro Val Asn His Ser Thr Arg
	15 20
	Lys Glu Glu Lys Gln Arg Asn Gly Thr Cys
15	25 30
	(2) INFORMATION FOR SEQ ID NO:44:
20	(i) SEQUENCE CHARACTERISTICS:
20	(A) LENGTH: 33 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
25	(11) Nobbook 1991 Paper
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:
•	Cys Pro Val Gly Thr Arg Asp Trp Ile Glu Gly Glu
	1 5 10
30	Thr Tyr Gln Cýs Arg Val Thr His Pro His Leu Pro
	15 20

Arg Ala Leu Met Arg Ser Thr Thr Cys

30

	(2) INFORMATION FOR SEQ ID NO:45:	
•	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 14 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
5	(ii) MOLECULE TYPE: peptide	
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:	
10	Ser Thr Thr Lys Thr Ser Gly Pro Arg Ala Ala Pro 1 5 10	Glu Val
	(2) INFORMATION FOR SEQ ID NO:46:	
15	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 14 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
20	<pre>(ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:</pre>	
	Cys Trp Ser Arg Ala Ser Gly Lys Pro Val Cys Asn 1 5 10	His Ser
25	(2) INFORMATION FOR SEQ ID NO:47:	
	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 19 amino acids	
30	(B) TYPE: amino acid (D) TOPOLOGY: linear	
	(ii) MOLECULE TYPE: peptide	
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:	

•	Cys 1	Ser Arg Pro Ser Pro Phe Asp Leu Phe Ile Arg 5 10
	Lys	Ser Pro Thr Ile Thr Cys 15
5	(2)	. INFORMATION FOR SEQ ID NO:48:
	(2)	INFORMATION TON BEG ID NO. 40.
		(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 13 amino acids(B) TYPE: amino acid
10		(D) TOPOLOGY: linear
		(ii) MOLECULE TYPE: peptide
15		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:
	Cys 1	Val Gly Thr Arg Asp Trp Ile Glu Gly Glu Pro Cys 5 10
	(2)	INFORMATION FOR SEQ ID NO:49:
20		(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 15 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
25		(ii) MOLECULE TYPE: peptide
		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:
30	Cys 1	Pro Pro Val Gly Thr Arg Asp Trp Ile Glu Gly 5 10
	Glu	Pro Cys

(2) INFORMATION FOR SEQ ID NO:50:

•	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 16 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
5	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:
	Cys Lys Glu Glu Lys Gln Arg Asn Gly Thr Leu Thr 1 5 10
10	Val Thr Ser Cys 15
15	(2) INFORMATION FOR SEQ ID NO:51:
	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 8 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
20	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:
25	Lys Glu Glu Lys Gln Arg Asn Gly 1 5
·	(2) INFORMATION FOR SEQ ID NO:52:
30	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 11 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide

```
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:
        Cys Trp Ser Arg Ala Ser Gly Lys Pro Val Cys
          1
 5
         (2) INFORMATION FOR SEQ ID NO:53:
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 21 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
10
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:
15
        Pro Thr Ile Thr Cys Leu Val Leu Asp Leu Ala Pro
         Ser Lys Gly Thr Val Asn Leu Thr Cys
                                      20
                  15
20
         (2) INFORMATION FOR SEQ ID NO:54:
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 16 amino acids
                 (B) TYPE: amino acid
25
                 (D) TOPOLOGY: linear
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:
30
         Pro Thr Ile Thr Cys Leu Val Leu Asp Leu Ala Pro
                                               10
           1
                           5
         Ser Lys Gly Thr
                  15
```

•	(2) INFORMATION FOR SEQ ID NO:55:
	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 25 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
5	(ii) MOLECULE TYPE: peptide(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:
10	Thr Ser Thr Leu Pro Val Gly Thr Arg Asp Trp Ile 1 5 10
	Glu Gly Glu Thr Tyr Gln Cys Arg Val Thr His Pro 15 20
15	His 25
	(2) INFORMATION FOR SEQ ID NO:56:
20	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 16 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
•	(ii) MOLECULE TYPE: peptide
25	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:
	Pro Thr Ile Thr Ser Leu Val Leu Cys Leu Ala Pro 1 5 10
	Ser Lys Gly Cys 15
30	vol. Turner vol. Dop. GDO. TD. No. 57.
	(2) INFORMATION FOR SEQ ID NO:57:
	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 23 amino acids

(B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:57: Cys Val Asn Leu Thr Trp Ser Arg Ala Ser Gly Lys 5 Pro Val Asn His Ser Thr Arg Lys Glu Glu Cys 20 15 10 (2) INFORMATION FOR SEQ ID NO:58: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 53 amino acids (B) TYPE: amino acid 15 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:58: 20 Cys Thr Trp Ser Arg Ala Ser Gly Lys Pro Val Asn 10 5 1 His Ser Thr Arg Lys Glu Glu Lys Gln Arg Asn Gly 15 Thr Leu Thr Val Thr Ser Thr Leu Pro Val Gly Thr 25 -30 Arg Asp Trp Ile Glu Gly Glu Thr Tyr Gln Cys Arg 45 40 Val Thr His Pro His 50 30 (2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

0	(A) LENGTH: 10 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
5	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:
5	Lys Thr Lys Gly Ser Gly Phe Phe Val Phe 1 5 10
10	(2) INFORMATION FOR SEQ ID NO:60:
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 19 amino acids (B) TYPE: amino acid
	(D) TOPOLOGY: linear
15	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
20	(B) LOCATION: 4
	(D) OTHER INFORMATION: /note= "Ser or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site(B) LOCATION: 7
25	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
30	(B) LOCATION: 8
	(D) OTHER INFORMATION: /note= "Gly or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
35	. (B) LOCATION: 12

	(D) OTHER INFORMATION: /note= "His or Thr"
0	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 13 (D) OTHER INFORMATION: /note= "Lys or Arg"</pre>
5	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 16 (D) OTHER INFORMATION: /note= "Gly or Thr"</pre>
10	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:
	Ile Ser Ile Xaa Glu Ile Xaa Xaa Val Ile Val Xaa 1 5 10
15	Xaa Ile Glu Xaa Ile Leu Phe 15
15	(2) INFORMATION FOR SEQ ID NO:61:
20	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 15 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
25	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:
•	Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu 1 5 10
	Glu Gly Val 15
30	(2) INFORMATION FOR SEQ ID NO:62:
	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 amino acids
35	(B) TYPE: amino acid

(D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:62: Gly Ile Leu Glu Ser Arg Gly Ile Lys Ala Arg Ile 5 Thr His Val Asp Thr Glu Ser Tyr 20 15 10 (2) INFORMATION FOR SEQ ID NO:63: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear 15 (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:63: 20 Lys Lys Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile 10 1 Gly Ile Thr Glu Leu 15 25 (2) INFORMATION FOR SEQ ID NO:64: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 22 amino acids (B) TYPE: amino acid 30 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:
0	Lys Lys Phe Asn Asn Phe Thr Val Ser Phe Trp Leu
·	1 Some Arg Val Pro Lys Val Ser Ala Ser His Leu 15 20
5	(2) INFORMATION FOR SEQ ID NO:65:
•	(2) INFORMATION FOR SEQ ID NO.03.
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 30 amino acids(B) TYPE: amino acid
10	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:
	Lys Lys Leu Arg Arg Leu Leu Tyr Met Ile Tyr Met 1 5 10
	Ser Gly Leu Ala Val Arg Val His Val Ser Lys Glu 15 20
20	Glu Gln Tyr Tyr Asp Tyr 25 30
	(2) INFORMATION FOR SEQ ID NO:66:
25	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 27 amino acids
	(B) TYPE: amino acid (D) TOPOLOGY: linear
30	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:
	(XI) SEQUENCE DESCRIPTION. SEQ ID NO. 00.
	Tyr Asp Pro Asn Tyr Leu Arg Thr Asp Ser Asp Lys 1 5 10
35	1 5 10

o	Asp Arg Phe Leu Gln Thr Met Val Lys Leu Phe Asn 15 20 Arg Ile Lys 25
5	 (2) INFORMATION FOR SEQ ID NO:67: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 24 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
10	<pre>(ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:</pre>
15	Gly Ala Tyr Ala Arg Cys Pro Asn Gly Thr Arg Ala 1 5 10 Leu Thr Val Ala Glu Leu Arg Gly Asn Ala Glu Leu 15 20
20	 (2) INFORMATION FOR SEQ ID NO:68: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 15 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
25	(ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:
30	Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln 1 5 10 Ser Leu Asp 15
	(2) INFORMATION FOR SEO ID NO:69:

0	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 21 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
5	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:
	Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala 1 5 10
10	Tyr Arg Pro Pro Asn Ala Pro Ile Leu 15 20
	(2) INFORMATION FOR SEQ ID NO:70:
15	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 20 amino acids(B) TYPE: amino acid
	(D) TOPOLOGY: linear
20	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:
	Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp 1 5 10
25	Thr Ala Ser Ala Leu Tyr Arg Glu 15. 20
	(2) INFORMATION FOR SEQ ID NO:71:
30	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 20 amino acids (B) TYPE: amino acid
	(D) TOPOLOGY: linear

	(ii) MOLECULE TYPE: peptide
•	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:
	Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys
	1 5 10
5	Trp Gly Glu Leu Met Thr Leu Ala 15 20
-	
	(2) INFORMATION FOR SEQ ID NO:72:
10	(i) SEQUENCE CHARACTERISTICS:
10	(A) LENGTH: 17 amino acids
	(B) TYPE: amino acid (D) TOPOLOGY: linear
	(b) Torollogi. Timear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:
	(XI) SEQUENCE DESCRIPTION. DEG ID NOT DE
	Trp Val Arg Asp Ile Ile Asp Asp Phe Thr Asn Glu
	1 5 10 Ser Ser Gln Lys Thr
20	15
	(2) INFORMATION FOR SEQ ID NO:73:
	(2) INICIALITON TON DEG ID NOT
25	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 19 amino acids (B) TYPE: amino acid
•	(D) TOPOLOGY: linear
	•
30	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:
	Are als clu are als the top His The Pro Thr Are
	Arg Ala Gly Arg Ala Ile Leu His Ile Pro Thr Arg 1 5 10
35	

•	Ile Arg Gln Gly Leu Glu Arg 15
	(2) INFORMATION FOR SEQ ID NO:74:
5	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 21 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
10	<pre>(ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:</pre>
	Ala Val Ala Glu Gly Thr Asp Arg Val Ile Glu Val 1 5 10
15	Leu Gln Arg Ala Gly Arg Ala Ile Leu 15 20
	(2) INFORMATION FOR SEQ ID NO:75:
20	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 25 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
25	<pre>(ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:</pre>
	Ala Leu Asn Ile Trp Asp Arg Phe Asp Val Phe Ser
	1 5 10
30	Thr Leu Gly Ala Thr Ser Gly Tyr Leu Lys Gly Asn 15 20
	Ser

	(2)	INFO	RMAT	ION	FOR	SEQ	ID N	0:76	:			
	-	(i)	(A) (B)	LENG TYPE		22 a nino	minc acid					
		(ii)	MOI	ECUI	E TY	PE:	pept	ide				
		(xi)	SEÇ	QUENC	CE DE	ESCRI	PTIC	on: S	EQ I	D NO	:76:	
	Asp	Ser	Glu	Thr	Ala 5	Asp	Asn	Leu	Glu	Lys 10	Thr	Val
	Ala	Ala	Leu 15	Ser	Ile	Leu	Pro	Gly 20	His	Gly		
•	(2)	INF	ORMA:	rion	FOR	SEQ	ID 1	NO:77	':			
		(i)	(A) (B)	LENG TYP		39 a mino	amino acio					
•		(ii) MO	LECU:	LE T	YPE:	pep	tide				
		(xi) SE	QUEN	CE D	ESCR:	IPTI(ON: S	SEQ :	ID NO	D:77:	:
	Glu 1	Glu	Ile	Val	Ala 5	Gln	Ser	Ile	Ala	Leu 10	Ser	Ser
	Leu	Met	Val 15	Ala	Gln	Ala	Ile	Pro 20	Leu	Val	Gly	Glu
	Leu 25		Asp	Ile	Gly	Phe 30	Ala	Ala	Thr	Asn	Phe 35	Val
	Glu	Ser	Cys									

- (2) INFORMATION FOR SEQ ID NO:78:
 - (i) SEQUENCE CHARACTERISTICS:

•	(A) LENGTH: 21 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
-	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:
5	Asp Ile Glu Lys Lys Ile Ala Lys Met Glu Lys Ala 1 5 10
	Ser Ser Val Phe Asn Val Val Asn Ser 15 20
10	
	(2) INFORMATION FOR SEQ ID NO:79:
15	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 17 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
20	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:
	Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp 1 5 10
25	Glu Lys Ile Arg Ile 15
	(2) INFORMATION FOR SEQ ID NO:80:
30	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 14 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
35	(ii) MOLECULE TYPE: peptide

•	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:
	Gly Leu Gln Gly Lys Ile Ala Asp Ala Val Lys Ala
	Lys Gly
5	(2) INFORMATION FOR SEQ ID NO:81:
10	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 19 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:
	Gly Leu Ala Ala Gly Leu Val Gly Met Ala Ala Asp 1 5 10
	Ala Met Val Glu Asp Val Asn 15
20	(2) INFORMATION FOR SEQ ID NO:82:
	(i) SEQUENCE CHARACTERISTICS:
25	(A) LENGTH: 20 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:
30	Ser Thr Glu Thr Gly Asn Gln His His Tyr Gln Thr 1 5 10
	Arg Val Val Ser Asn Ala Asn Lys 15 20

٥	(2) IN	ORMATION FOR SEQ ID NO.03.
	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 15 amino acids
		(B) TYPE: amino acid
_		(D) TOPOLOGY: linear
5	(i:	i) MOLECULE TYPE: peptide
	(x:	i) SEQUENCE DESCRIPTION: SEQ ID NO:83:
10	Cys Pro 1	Ser Pro Phe Asp Leu Phe Ile Arg Lys Ser 5 10
	Pro Th	r Cys 15
15	(2) IN	FORMATION FOR SEQ ID NO:84:
	(i) SEQUENCE CHARACTERISTICS:
		(A) LENGTH: 25 amino acids
		(B) TYPE: amino acid
20		(D) TOPOLOGY: linear
	(i	i) MOLECULE TYPE: peptide
	(x	i) SEQUENCE DESCRIPTION: SEQ ID NO:84:
25	3	la cla mba man Ing Cor mbr Wal Sor His Pro
	_	ly Glu Thr Tyr Lys Ser Thr Val Ser His Pro 5 10
_	l Asp I	eu Pro Arg Glu Val Val Arg Ser Ile Ala Lys
	. Asp L	15 20
	Cys	- -
30	25	•
<i></i>		

(2) INFORMATION FOR SEQ ID NO:85:

	(i) SEQUENCE CHARACTERISTICS:
•	(A) LENGTH: 60 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
•	•
	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
5	(A) NAME/KEY: Modified-site
	(B) LOCATION: 18
	(D) OTHER INFORMATION: /note= "Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
10	(B) LOCATION: 21
	(D) OTHER INFORMATION: /note= "Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
15	(B) LOCATION: 22
	(D) OTHER INFORMATION: /note= "Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
20	(B) LOCATION: 26
20	(D) OTHER INFORMATION: /note= "Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 27
25	(D) OTHER INFORMATION: /note= "Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 30
30	(D) OTHER INFORMATION: /note= "Thr"
·	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:
	(XI) SEQUENCE DESCRIPTION. SEQ ID NO.05.
T	hr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu
25	1 5 10
35	•

Gly Gly Ile Ser Ile Ser Glu Ile Lys Gly Val Ile 15 Val His Lys Ile Glu Gly Ile Leu Phe Gly Gly Cys 30 25 Gly Gly Thr Tyr Gln Ser Arg Val Thr His Pro His 45 Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys 5 60 55 50 (2) INFORMATION FOR SEQ ID NO:86: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids 10 (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide 15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:86: Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp 10 · 1 Glu Lys Ile Arg Ile 15 20 (2) INFORMATION FOR SEQ ID NO:87: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 62 amino acids 25 (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:87: 30 Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp Glu Lys Ile Arg Ile Lys Lys Lys Ile Ile Thr 20 15

10

15

20

25

Ile	Thr	Arg	Ile	Ile	Thr	Ile	Ile	Thr	Yhr	Ile	Asp
25					30					35	
Lys	Cys	Gly	Glu	Thr	Tyr	Tyr	Ser	Arg	Val	Thr	His
•	_		40					45			
Pro	His	Leu	Pro	Lys	Asp	Ile	Val	Arg	Ser	Ile	
•	50					55					60
Lys	Cys										

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 57 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

- (2) INFORMATION FOR SEQ ID NO:89:
 - (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

35

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89: Ile Ser Leu Thr Glu Ile Arg Thr Val Ile Val Thr 10 Arg Leu Glu Thr Val Leu Phe 15 5 (2) INFORMATION FOR SEQ ID NO:90: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 45 amino acids (B) TYPE: amino acid 10 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:90: 15 Ile Ser Leu Thr Glu Ile Arg Thr Val Ile Val Thr 10 5 Arg Leu Glu Thr Val Leu Phe DLys Cys Gly Glu Thr 20 15 Tyr Tyr Ser Arg Val Thr His Pro His Leu Pro Lys 20 35 30 25 Asp Ile Val Arg Ser Ile Ala Lys Cys 40 25 (2) INFORMATION FOR SEQ ID NO:91: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 63 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear 30 (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp

1

10

Glu Lys Ile Arg Ile OLys Ile Ser Leu Thr Glu Ile

20

Arg Thr Val Ile Val Thr Arg Leu Glu Thr Val Leu

25

30

Phe OLys Cys Gly Glu Thr Tyr Tyr Ser Arg Val Thr

40

45

His Pro His Leu Pro Lys Asp Ile Val Arg Ser Ile

50

Ala Lys Cys